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AIP Pub. No. R-151.27

June 1990

ENROLLMENTS AND DEGREES

The arrival of a new decade presents the opportunity to review some of the problems anticipated for it during the previous decade and re-evaluate their severity. Two problems, causing major concern for the academic physics community, deal with the possible effects of a declining college-age population, and with the consequences of a potential increase in retirements, as a result of which, large numbers of physicists may need to be replaced by the end of the 1990s.

Since both problems are related to the education pipeline, a thorough analysis of its components could form a basis for finding solutions. Since 1960, such analyses were carried out as part of the annual survey of Enrollments and Degrees and they have provided comprehensive reliable data on physics students and degree recipients from freshman enrollments to the fluctuating PhD production. By focusing on data that describe the most recent ten-year period, we were able to determine that the declining college-age population has not yet had any marked effect on undergraduate physics majors. This conclusion is based on an examination of the enrollment totals discussed in more detail in connection with **Figure II**.

Table I indicates how many degree-granting physics programs there are in the United States; it classifies them by highest degree and identifies in its footnote the five institutions that have two physics doctorate-granting departments.

Table I. Institutions by highest physics degree offered, 1985–1990.

Academic year	Doctoral-granting*	Master's-granting	Bachelor's-granting
1985–86	168	91	485
1986–87	168	90	496
1987–88	169	90	498
1988–89	169	89	496
1989–90	171	85	497

**Five of these institutions have two physics doctorate-granting departments. They are Stanford U., U. of CA-Davis, Yale U., Harvard U. and Cornell U.*

To address the problem of vacancies that will be created by highly trained physicists who retire, we need to examine the other end of the pipeline and focus on physics education at the graduate level. From its rising enrollment trends we can try to project the extent to which future demands will be met. The second part of **Figure I** indicates the gradual rise in PhD production since 1982. This figure also identifies two types of master's degrees: the terminal master's degrees and those granted enroute to higher physics degrees.

Figure I. Physics degrees awarded by academic year, 1978–1989.

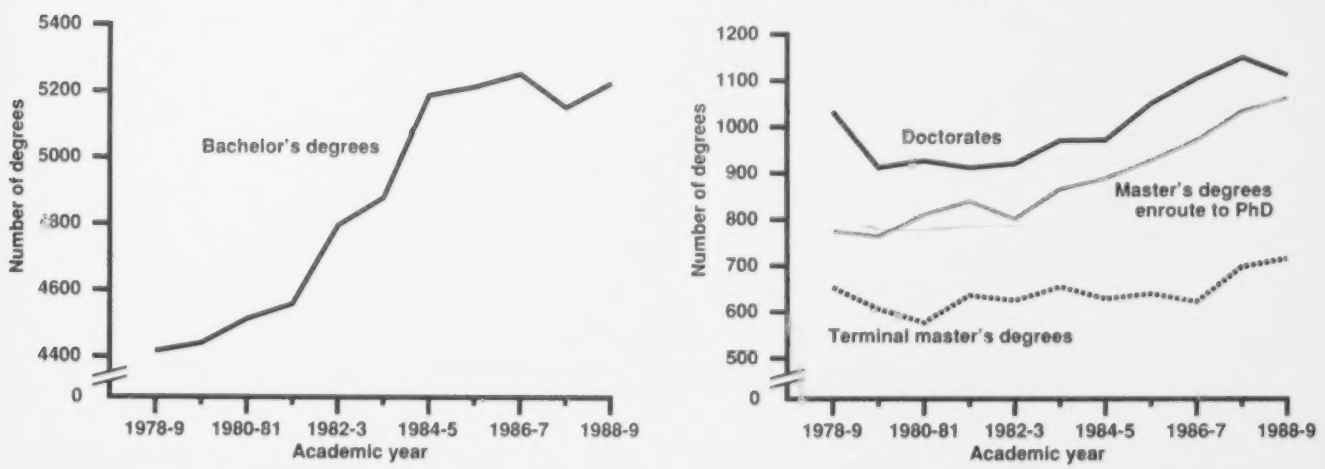

Table II. Physics enrollments and degrees awarded by academic year, 1978–1990.

Academic year	Number of physics degrees granted (July 1 to June 30)			Undergraduate physics major enrollments		Graduate physics student enrollments*	
	Bachelor's	Master's	Doctor's	Juniors	Seniors	Total	1st year
1978–79	4416	1428	1033	5835	4964	9 813	2458
1979–80	4440	1370	912	5696	4942	9 647	2439
1980–81	4513	1387	927	5905	5091	9 934	2564
1981–82	4558	1476	912	6386	5372	10 173	2637
1982–83	4795	1426	921	6299	5580	10 429	2630
1983–84	4878	1521	971	6303	5658	10 922	2855
1984–85	5188	1518	972	6601	6009	11 337	2863
1985–86	5214	1589	1051	6689	6092	12 011	2981
1986–87	5253	1596	1105	6592	6119	12 616	3162
1987–88	5152	1733	1150	6412	5959	13 143	3274
1988–89	5226	1781	1112	6390	5914	13 361	3132
1989–90				6313	5896	13 708	3059

**Includes part-time students.*

The numerical data for both parts of **Figure I** are presented as part of **Table II** which also includes undergraduate and graduate physics enrollments. Although curricula differ widely among the 750 undergraduate physics programs, the great majority of schools expect their students to have completed the necessary prerequisites by the time they reach their junior year to declare their majors. Thus, examining the numbers of juniors since 1985-86 a gradual but distinctly declining trend becomes evident. The total graduate enrollment, on the other hand, continues to increase for the tenth consecutive year.

Table III. Undergraduate and graduate enrollments and degrees by institution type, 1978–1990.

Academic year	Number of physics degrees granted (July 1 to June 30)			Undergraduate physics-major enrollments		Graduate physics student enrollments*	
	Bachelor's	Master's	Doctor's	Juniors	Seniors	Total	1st year
Doctoral-granting institutions							
1978–79	2158	1183	1033	2937	2579	8 864	2107
1979–80	2142	1151	912	2696	2491	8 744	2072
1980–81	2123	1161	927	2765	2568	9 062	2223
1981–82	2179	1281	912	2996	2671	9 273	2275
1982–83	2192	1210	921	2962	2645	9 524	2288
1983–84	2195	1319	971	2955	2824	10 006	2495
1984–85	2460	1286	972	3059	3105	10 357	2443
1985–86	2377	1358	1051	3120	2961	10 937	2574
1986–87	2473	1357	1105	3132	3148	11 389	2667
1987–88	2460	1432	1150	3030	2991	11 880	2737
1988–89	2526	1465	1112	3018	2972	12 069	2638
1989–90				2877	2993	12 440	2623
Master's-granting institutions							
1978–79	541	245		795	694	949	351
1979–80	585	219		705	650	903	367
1980–81	589	226		868	655	872	341
1981–82	532	195		917	734	900	362
1982–83	554	216		877	752	905	342
1983–84	610	202		830	722	916	360
1984–85	658	232		974	781	980	420
1985–86	632	231		1014	865	1 074	407
1986–87	660	239		913	791	1 227	495
1987–88	591	301		871	750	1 263	537
1988–89	582	316		822	795	1 292	494
1989–90				773	737	1 268	436
Bachelor's-granting institutions							
1978–79	1717			2103	1691		
1979–80	1713			2295	1801		
1980–81	1801			2272	1868		
1981–82	1847			2473	1967		
1982–83	2049			2460	2183		
1983–84	2073			2518	2112		
1984–85	2070			2568	2123		
1985–86	2205			2555	2266		
1986–87	2120			2547	2180		
1987–88	2101			2511	2218		
1988–89	2118			2550	2147		
1989–90				2663	2166		

**Includes part-time students.*

Table IV. Number of students enrolling in their first college/university physics course in 1989–90.

Discipline of potential majors	Institution type: Bachelor's-granting N		Master's-granting N		Doctoral-granting N		Total N		N
Type of course	Calculus-based	Algebra-based	Calculus-based	Algebra-based	Calculus-based	Algebra-based	Calculus-based	Algebra-based	Total intro.
Engineering majors	16 500	2 000	10 700	1 100	53 300	5 200	80 500	8 300	88 800
Physical sciences majors*	10 900	5 300	4 000	3 100	21 000	8 800	35 900	17 200	53 100
Biology, health-related majors	4 500	17 000	850	10 000	10 700	28 500	16 050	55 500	71 550
Other, incl. major not yet declared	4 000	17 500	950	11 500	6 300	41 600	11 250	70 600	81 850
	35 900	41 800	16 500	25 700	91 300	84 100	143 700	151 600	
Total introductory enrollment N	77 700		42 200		175 400				295 300
%	26.3		14.3		59.4				100%

**Includes physics, chemistry, mathematics, etc.*
Note: The format of the question asking for introductory enrollments has been changed so as to include single-semester algebra-based courses.

To illustrate how unevenly physics students are distributed among the three types of institutions (defined in **Table I**), we present an expanded version of **Table II** in the form of **Table III**. Here we find that approximately half of the undergraduate physics majors are enrolled at the doctorate-granting institutions which collectively comprise less than one-quarter of all institutions that grant physics bachelor's degrees. Should shifts in enrollments or degree production occur among the types of institutions, they can readily be identified from the format of **Table III**.

Introductory physics enrollment

In order to attract a more diversified group of students into the introductory physics courses, most of the physics departments offer both algebra-based and calculus-based courses. A third type of introductory physics course offered by a few physics departments has no prerequisite at all; enrollments in those courses were included with the algebra-based courses in **Table IV**. The question that prompted these enrollment totals asked for the number of students who enrolled in their first college/university physics course in 1989-90. When dividing the collective total of 300,000 students according to their intended majors, we find that the split between enrolling in calculus-based or algebra-based courses forms a 10:1 ratio for the engineering majors, a 2:1 ratio for those interested in a hard science or mathematics and a 1:3 ratio for the life science or health profession majors. The fourth category, referring to "other" majors, include technology and architecture majors for whom an introductory physics course will be required, but a majority of those 82,000 students will eventually choose one of the three majors listed in **Table IV**.

Undergraduate physics majors

With a greater emphasis on required courses in recent years, the decision to major in physics needs to be made close to the freshman year. Consequently chairpersons, who monitor the enrollments in lower level physics courses, can provide fairly reliable estimates of their prospective physics majors at the freshman and sophomore levels. From the early 1980s on, each fall those estimates ranged from eight to nine thousand freshmen who were sufficiently motivated to express their intentions to major in physics. Traditionally, two-thirds of each class of freshman physics majors sustain their interest in the subject matter over a four-year period while they derive additional encouragement from either the research atmospheres offered at 171 large universities, (see **Table I**) or the intimate environments created by some of the 497 four-year colleges. The resulting annual production of physics bachelors is presented in the first part of **Figure I**.

We present four graduating classes in **Figure II**, starting with the class of 1990 for which we have firm data. This class shows a 31% attrition between the 8584 freshmen, estimated by the

Figure II. Actual and projected number of undergraduate physics majors.

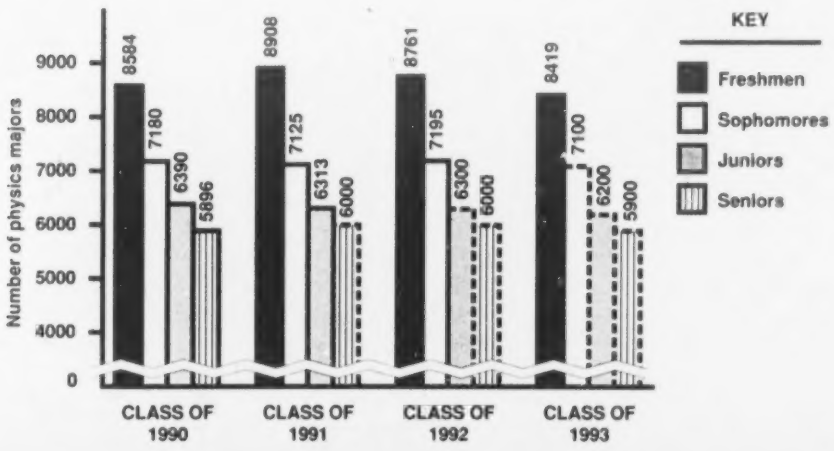

Table V. Attrition of undergraduate physics majors by type of institution, 1976–77 to 1988–89.

	Doctoral-granting institution		Master's-granting institution		Bachelor's-granting institution	
Graduating class	No. of freshmen	% reaching sr. year	No. of freshmen	% reaching sr. year	No. of freshmen	% reaching sr. year
1980	3400	74%	1110	60%	3200	56%
1981	3450	73	1070	63	3310	57
1982	3520	73	1140	63	3410	59
1983	3590	72	1160	63	3510	60
1984	3770	74	1250	60	3550	60
1985	3890	75	1160	68	3560	60
1986	3940	78	1170	69	3570	61
1987	3930	77	1120	71	3590	61
1988	3890	76	1125	71	3585	60
1989	3850	77	1130	70	3670	59

Note: Number of freshmen are based on 3-year averages.

chairpersons in the fall of 1986, and the 5896 seniors recorded for the academic year 1989-90. For a larger number of freshmen the attrition tends to be higher because the estimates invariably include some less serious students. Thus we project a 33% attrition for the class of 1991 because in the fall of 1987 chairpersons reported the highest estimates of freshmen ever recorded. If 32% and 30% were the attrition rates for the classes of 1992 and 1993 respectively, we expect 6000 and 5900 physics majors to reach senior status for those two graduating classes.

Having illustrated the differences that exist among the three types of institutions, it should come as no surprise to find differing attrition rates among their respective undergraduate physics majors. An illustration of this occurrence can be found in **Table V**, which indicates what proportion of freshmen reach senior status at each of the three types of institutions. For example, PhD-granting institutions appear to have the highest retention rates where three out of four freshmen remain physics majors into the senior year. The lowest retention rate was consistently recorded for the four-year colleges where only 60% reached senior status. The master's institutions, with the smallest enrollment of physics majors, showed the greatest change in retention rates over a ten-year period. Only 60% of the 1110 freshmen in 1976-77 reached senior status in 1979-80; nine years later, in 1985-86, the total number of freshmen hardly changed (1130) but the proportion reaching senior status had increased to 70% for that type of institution.

A variety of undergraduate physics programs can be found in all regions of the United States, as indicated by their geographic distribution presented in **Table VI**. Since half of the physics majors are interested in immediate employment rather than graduate school, a rising number of undergraduates extend their senior status over more than one year in order to acquire some experience with the job market. This group, which more than doubled in the last ten years, is presented in the right-hand column of **Table VI** under the heading "Fifth-year undergraduates." The lower portion of this table presents the enrollments by type of institution from which the trend data of **Table V** were calculated.

Table VI. Undergraduate physics majors by geographic region and type of institution, 1989–90.

Geographic region*	Estimated** no. of freshmen	Estimated** no. of sophomores	Number of juniors	Number of seniors	Fifth-year undergraduates
New England	669	578	555	483	31
Mid Atlantic	1380	1173	1008	888	108
E. N. Central	1355	1135	997	907	208
W. N. Central	745	647	555	472	99
S. Atlantic	1297	1136	929	783	161
E. S. Central	359	315	287	220	33
W. S. Central	722	604	536	499	136
Mountain	586	512	451	512	138
Pacific	1306	1095	995	1132	312
Total	8419	7195	6313	5896	1226
Doctoral-granting inst.	3677	3215	2877	2993	671
Master's-granting inst.	966	890	773	737	230
Bachelor's-granting inst.	3776	3090	2663	2166	325

** New England—CT, ME, MA, NH, RI, VT; Middle Atlantic—NJ, NY, PA; East North Central—IL, IN, MI, OH, WI; West North Central—IA, KS, MN, MO, NE, ND, SD; South Atlantic—DE, DC, FL, GA, MD, NC, SC, VA, WV; East South Central—AL, KY, MS, TN; West South Central—AR, LA, OK, TX; Mountain—AZ, CO, ID, MT, NV, NM, UT, WY; Pacific—AK, CA, HI, OR, WA.*

***Estimates of potential physics majors are made by the physics department chairpersons.*

Table VII. Trend in entering U.S. and foreign graduate physics students, 1980–1990.

Academic year	No. of first-year graduate students U.S.	Foreign	Total	% foreign students of total
1980–81	1720	844	2564	32.9
1981–82	1654	983	2637	37.3
1982–83	1576	1054	2630	40.1
1983–84	1763	1092	2855	38.2
1984–85	1747	1116	2863	39.0
1985–86	1721	1260	2981	42.3
1986–87	1799	1363	3162	43.1
1987–88	1944	1330	3274	40.6
1988–89	1825	1307	3132	41.7
1989–90	1724	1335	3059	43.6

Graduate enrollment

Concern over meeting the demand for U.S. physicists in the 1990s can be substantiated by looking at the last three rows of the trend data presented in **Table VII**. It seems that despite the major recruiting efforts of graduate physics departments, the number of U.S. citizens who enroll as first-year graduate physics students is declining again. **Table VII** takes us back to 1980 when foreign students comprised one-third of the new graduate physics students; by 1990, the new foreign graduate students have reached an all-time high of 43.6%.

For a more detailed look at the graduate enrollment, we focus on the study status and citizenship of all level graduate physics students at the two types of institutions. **Table VIII** indicates that the master's institutions enroll only 10% of the graduate physics students but the composition of that student body has undergone major changes during the past decade. An important function of those institutions continues to be that of providing limited graduate training in late afternoon or evening programs to part-time students who are full-time employees of industrial companies in their geographic areas. Although the number of those part-time students has not changed significantly since 1980, the proportion they comprise of the total enrollment at that type of institution, declined from one-half to one-third. The increase in foreign students, almost all of whom study on a full-time basis, accounts for that change.

Table VIII. Full-time, part-time, and foreign graduate physics enrollment by type of institution, 1980–1990.

	Graduate students at doctoral-granting institutions					Graduate students at master's-granting institutions				
Academic year	Full-time	Part-time	Foreign	% foreign of total	Total	Full-time	Part-time	Foreign	% foreign of total	Total
1980–81	8 302	760	2540	28.0	9 062	484	388	163	18.7	872
1981–82	8 555	718	2894	31.2	9 273	543	357	213	23.7	900
1982–83	8 712	812	3193	33.5	9 524	566	339	221	24.4	905
1983–84	9 285	721	3433	34.3	10 006	569	347	254	27.7	916
1984–85	9 647	710	3811	36.8	10 357	604	376	293	29.9	980
1985–86	10 119	818	4259	38.9	10 937	620	454	306	28.5	1074
1986–87	10 538	851	4519	39.7	11 389	772	455	397	32.4	1227
1987–88	11 015	865	4813	40.5	11 880	797	466	448	35.5	1263
1988–89	11 182	887	5049	41.8	12 069	830	462	471	36.5	1292
1989–90	11 643	797	5328	42.8	12 440	839	429	454	35.8	1268

Table IX. Regional distribution of U.S. and foreign teaching assistants by type of institution, 1989–90.

Geographic region*		Doctoral-granting institutions		Master's-granting institutions	
		Total no. of TA's	Total no. of foreign TA's	Total no. of TA's	Total no. of foreign TA's
New England		508	250	27	17
Mid Atlantic		767	471	22	8
E. N. Central		775	325	177	115
W. N. Central		275	153	55	24
S. Atlantic		595	265	74	26
E. S. Central		163	95	43	21
W. S. Central		449	282	50	24
Mountain		356	183	6	3
Pacific		680	233	69	19
Total	N	4568	2257	523	257
	%		49.4%		49.1%

** New England—CT, ME, MA, NH, RI, VT; Middle Atlantic—NJ, NY, PA; East North Central—IL, IN, MI, OH, WI; West North Central—IA, KS, MN, MO, NE, ND, SD; South Atlantic—DE, DC, FL, GA, MD, NC, SC, VA, WV; East South Central—AL, KY, MS, TN; West South Central—AR, LA, OK, TX; Mountain—AZ, CO, ID, MT, NV, NM, UT, WY; Pacific—AK, CA, HI, OR, WA.*

The visas with which foreign students enter the United States make them ineligible for off-campus employment; since very few of them receive support from their native countries, they compete with U.S. students for the available teaching assistantships offered at the institutions that enroll them. **Table IX** shows the geographic distribution of 5091 teaching assistantships and also shows that almost half of them are held by foreign graduate students.

Degrees granted

As we encounter more diversified educational backgrounds among the doctoral candidates, it becomes more difficult to project the number of degree recipients for future years. For example, up until this year we found a high correlation between the first-year graduate students at PhD-granting institutions and the number of doctorates granted five years later. But this formula does not take into account the increase in the number of foreign students who begin their graduate studies at master's institutions (see **Table VIII**) and subsequently transfer into doctoral programs. An altered pattern of this type may change the median number of years of graduate study that students need to complete their physics doctorates and may call for an adjustment in our projection method. The last point of actual data in **Figure III** reflects a 3% decline in the number of doctorates granted between 1988 and 1989. But for the next three years we project consecutive increases up to a total of 1260 PhDs in 1992, and a subsequent decline to 1200 physics doctorates to be conferred in 1994.

Figure III. Actual and projected number of physics doctorates granted, 1979-1994.

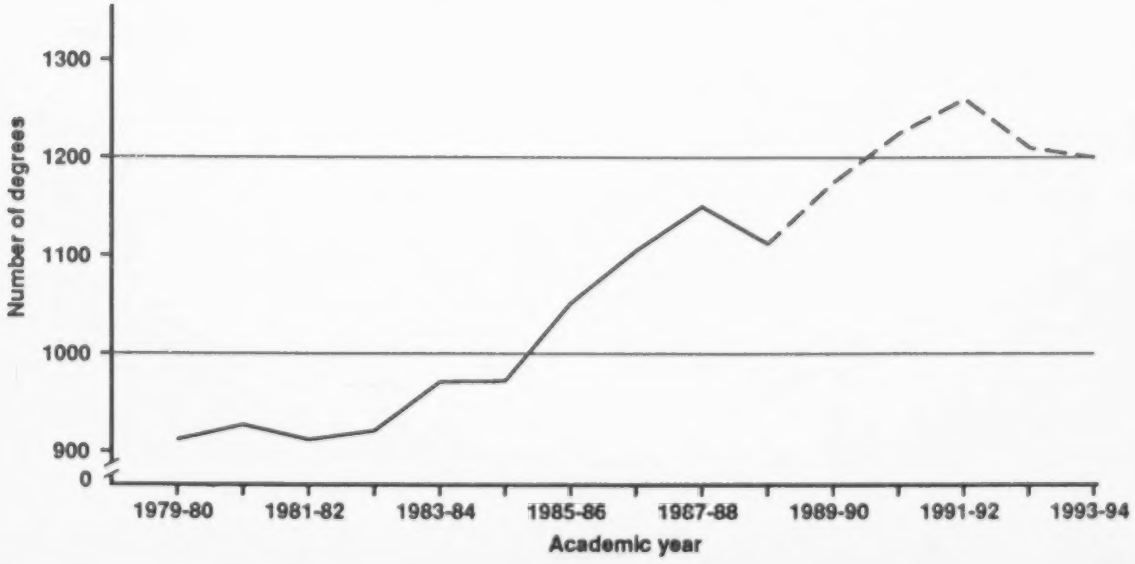

Table X. Physics degrees by type of institution and geographic region, 1988–89.**

Geographic region*	Bachelor's degrees			Master's degree		Terminal master's degrees		Doctorates
	Institution type			Institution type		Institution type		Institution type
	I	II	III	II	III	II	III	III
New England	149	12	329	13	111	8	62	138
Mid Atlantic	432	51	467	9	192	3	72	216
E. N. Central	316	130	328	46	164	49	102	211
W. N. Central	262	52	141	18	26	14	34	50
S. Atlantic	336	81	307	18	84	19	67	122
E. S. Central	108	47	57	13	37	4	19	24
W. S. Central	151	54	130	17	61	27	34	76
Mountain	90	12	262	0	67	7	36	74
Pacific	306	117	499	14	210	37	87	201
Subtotal	2150	556	2520	148	952	168	513	1112
Subtotal				1100		681		
Total		5226			1781			1112

See Table IX for explanation of geographic region.

***Institution type indicates the highest physics degree offered; type I = Bachelor's degree, type II = Master's degree, type III = Doctorate.*

The four types of degrees shown in **Figure I** and granted by three types of institutions are presented in considerable detail for the year 1988-89 in **Table X**. For example, this table presents a geographic distribution of 148 students who need to transfer from master's institutions in order to pursue doctoral studies. Although the master's institutions grant more terminal master's degrees than those granted enroute to a physics doctorate, it is the PhD-granting institutions that continue to grant three out of every four terminal master's degrees.

To make the information on minority groups more meaningful than in previous years, we have asked the physics departments that supply these data to single out the U.S. citizens from each group of degree recipients. We define minority groups as those who have a small but notable representation among the physics graduates, a definition that clearly applies to women who are granted physics degrees. **Table XI** continues to identify six specific minority groups, not including women, but its new format readily yields statistics such as: The proportion of physics doctorates granted to members of U.S. minority groups is 6%.

Table XI. Number of physics degrees granted by sex, citizenship and minority group* status, 1988–89.

Type of degrees	Sex	Total no. of degrees	Black		Native American Indian	Hispanic		Oriental		Asian Indian		Arab	
			U.S.	Foreign		U.S.	Foreign	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign
Bachelor's	Men	4390	133	12	3	46	14	143	52	29	30	20	29
	Women	836	20	–	2	9	3	27	17	5	5	2	2
	Total	5226	153	12	5	55	17	170	69	34	35	22	31
Master's enroute	Men	939	18	7	–	6	13	27	212	6	57	–	17
	Women	161	1	–	–	1	5	4	51	1	16	–	2
	Total	1100	19	7	–	7	18	31	263	7	73	–	19
Terminal master's	Men	571	16	5	1	2	9	8	53	–	20	2	14
	Women	110	1	1	–	–	3	3	13	–	17	–	3
	Total	681	17	6	1	2	12	11	66	–	37	2	17
Doctor's	Men	1021	8	6	1	7	21	30	218	4	55	5	28
	Women	91	1	1	1	2	3	5	19	2	8	–	1
	Total	1112	9	7	2	9	24	35	237	6	63	5	29

**Minorities in AIP surveys are defined as groups with a low representation in the physics community, but one whose participation has aroused considerable interest.*

ASTRONOMY

Table XII. Trend in astronomy enrollments and degrees, 1980–1990.

Academic year	No. of astronomy degrees granted (July 1 to June 30)				Undergraduate* astronomy major enrollments		Graduate astronomy enrollments*	
	Bachelor's	Master's enroute	Terminal master's	Doctor's	Juniors	Seniors	Total	1st year
1980–81	156	34	24	82	275	238	686	164
1981–82	181	54	15	70	252	224	647	142
1982–83	138	61	22	81	274	232	670	178
1983–84	137	51	22	74	242	217	688	154
1984–85	145	56	16	66	239	212	716	151
1985–86	169	61	24	86	232	252	711	170
1986–87	172	38	23	72	268	255	755	173
1987–88	181	51	24	94	250	285	731	171
1988–89	196	77	16	94	213	275	780	169
1989–90					223	200	842	186

**Includes part-time students.*

In the mid 1970s, this annual survey of Enrollments and Degrees was expanded to include 64 degree-granting astronomy departments, 24 of which are departments where physics and astronomy are combined. **Table XII** presents the trend data reported by all the astronomy departments and clearly points to steady increases in the number of bachelor's degrees granted since 1983. Also, the most recent graduate enrollment totals are the highest recorded since 1980. The drop in the number of seniors for 1989-90 reflects a change on the questionnaire. A parallel situation to that of the physics majors exists for the astronomy students where a growing number of undergraduates extend their senior status over more than one year; by subtracting the fifth-year seniors, we are left with 200 students who are fourth-year astronomy majors.

Table XIII focuses on the most recent enrollment and degree data and compares the contributions from 24 combined departments with those from 40 separate astronomy programs. Despite their reputation for popularity, the introductory astronomy courses, offered by both astronomy and physics departments, register only two-thirds of the number of students enrolled in introductory physics courses.

This report was prepared with the help of Thomas N. Stovall.

Table XIII. Astronomy* enrollments 1989–90 and degrees 1988–89 by type of institution.

	Type of astronomy department	Bachelor's-granting		Master's-granting		Doctoral-granting		Total
		Comb. dep'ts	Sep. dep'ts	Comb. dep'ts	Sep. dep'ts	Comb. dep'ts	Sep. dep'ts	
	Number of dep'ts.	13	7	2	2	9	31	64
Astronomy degrees	Bachelor's	20	16	3	4	8	146	196
	Master's enroute	–	–	4	2	–	71	77
	Terminal master's	–	–	2	2	2	10	16
	Doctor's	–	–	–	–	4	90	94
Astronomy enrollments	Annual intro. enrollments in astronomy dep'ts	8100	2750	2100	1700	4680	46 570	65 900
	Total annual enrollments including intro. astronomy taught in physics dep'ts.	–	–	–	–	–	–	178 900
	Junior astronomy majors	32	14	12	12	18	138	223
	Senior astronomy majors	23	12	5	3	20	138	200
	No. of applicants to grad. programs	–	–	26	17	753	2 639	3 414
	No. of acceptances to grad. programs	–	–	11	10	41	189	258
	First year graduate students	–	–	10	10	12	154	186
	Total graduate enrollment	–	–	22	21	78	721	842

**This survey includes only degree-granting astronomy departments.*

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AIP Pub. No. R-151.27a

June 1990

DATA ON PHYSICS ENROLLMENTS AND DEGREES

a SUPPLEMENT

The detailed data from the annual survey of Enrollments and Degrees are presented in this supplement. The 1988-89 physics degrees and the 1989-90 physics enrollments are listed for each of the 753 physics-degree-granting colleges and universities in the United States. Institutions are listed alphabetically by state. The data shown for each institution consist of undergraduate physics majors, full-time and part-time graduate students, first-year graduate students and physics degrees granted at all levels. All freshman and sophomore enrollments are estimated by the department chairpersons. Numbers shown in brackets are estimates based on data supplied by that institution in an earlier year.

Notations used in this supplement are:

* Institution grants master's degree as its highest physics degree. (N=86)

** Institution grants doctorate as its highest physics degree. (N=171)

1 No undergraduate degree program in physics.

Member Societies: The American Physical Society • Optical Society of America • Acoustical Society of America • The Society of Rheology • American Association of Physics Teachers American Crystallographic Association • American Astronomical Society • American Association of Physicists in Medicine • American Vacuum Society • American Geophysical Union

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
ALABAMA										
**Alabama A&M U	5	5	8	1	40	11	5	3	4	0
Alabama State U	2	2	2	1			1			
**AL-U of Birmingham	5	4	3	1	35	16	3	3	2	1
**AL-U of Huntsville	10	10	10	8	120	23	4	12	4	2
**AL-U of Univ./Tuscaloosa	6	9	8	5	25	4	3	3	0	4
**Auburn U	14	9	17	22	42	7	6	4	1	3
Birmingham-Southern Coll	(2)	(2)	(2)	(2)			(2)			
Jacksonville St U	5	3	4	2			0			
North Alabama-U of	(3)	(2)	(3)	5			(3)			
Samford U	3	0	3	4			2			
South Alabama-U of	2	0	3	3			1			
Stillman Coll	1	[illegible]	3	0			3			
Talladega Coll	5	1	6	2			0			
Tuskegee Inst	3	15	5	6			2			
ALASKA										
**Alaska-U of	9	12	4	2	35	10	2	1	3	1
ARIZONA										
**Arizona State U	17	16	13	25	86	22	13	0	7	10
**Arizona-U of	45	40	37	30	142	46	46	7	3	8
Northern Arizona U	11	4	6	11			2			
ARKANSAS										
Arkansas St U	2	2	3	2			4			
**AR-U of Fayetteville	10	8	7	4	36	4	4	0	0	1
AR-U of Little Rock	3	3	5	5			6			
AR-U of Monticello	0	0	1	1			1			
AR-U of Pine Bluff	1	2	0	0			0			
U of Central Arkansas	11	10	4	9			1			
Harding U	4	3	3	2			2			
Henderson St U	4	4	3	2			0			
Hendrix Coll	24	12	10	10			8			
Ouachita Baptist U	6	4	2	2			2			
Southern Arkansas U	3	2	3	1			2			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
CALIFORNIA										
**Cal Inst of Tech	40	40	40	31	150	41	31	20	0	17
Cal Poly St U-San L.O.	30	20	15	15			10			
Cal St U-Bakersfield	5	5	3	1			2			
Cal St U-Stanislaus	5	0	8	7			2			
Cal St Poly U-Pomona	30	30	31	56			12			
Cal St U-Chico	3	5	8	10			9			
Cal St U-Dominguez Hills	5	5	6	2			1			
*Cal St U-Fresno	13	10	6	6	10	4	6	0	1	
Cal St U-Fullerton	14	10	8	15			20			
Cal St U-Hayward	(6)	(6)	(5)	10			(8)			
*Cal St U-Long Beach	14	12	8	24	40	9	18	0	5	
*Cal St U-Los Angeles	10	15	5	10	27	7	3	3	5	
*Cal St U-Northridge	25	19	20	40	51	17	23	0	6	
Cal St U-Sacramento	(8)	(7)	(10)	10			(8)			
Cal St U-San Bernardino	12	12	14	11			2			
**CA-U of Berkeley	90	90	15	103	261	32	85	46	1	34
**CA-U of Davis	62	84	89	31	73	21	30	2	1	3
1**CA-U of Davis (Applied)	-	-	-	-	65	13	-	16	6	4
**CA-U of Irvine	90	50	44	70	94	27	42	10	0	9
**CA-U of Los Angeles	36	13	39	60	171	28	48	15	2	19
**CA-U of Riverside	14	24	28	19	65	11	14	3	4	4
**CA-U of San Diego	134	92	62	50	146	19	46	24	5	10
**CA-U of Santa Barbara	38	35	48	37	106	23	30	0	2	21
**CA-U of Santa Cruz	32	12	19	27	43	15	32	3	0	1
Claremont, McKenna Pitzer & Scripps Colls	(4)	(4)	(2)	(2)			(2)			
Harvey Mudd Coll	27	39	31	41			21			
Humboldt St U	16	7	10	7			5			
La Verne-U of	1	1	0	0			1			
Loma Linda U	3	0	0	2			1			
Loyola Marymount U	5	0	3	3			2			
1**Naval Postgrad. School	-	-	-	-	70	28	-	-	22	0
Occidental Coll	25	20	12	13			12			
Pacific Union Coll	10	9	4	6			2			
*Pacific-U of	5	1	5	3	1	1	4	1	0	
Point Loma Coll	7	3	3	2			3			
Pomona Coll	15	12	10	12			7			
Redlands-U of	6	4	2	3			2			
*San Diego St U	10	10	40	30	30	14	30	0	6	
San Diego-U of	2	2	2	2			1			
*San Francisco St U	(25)	(25)	(20)	(20)	59	(10)	(15)	(9)	(4)	
San Francisco-U of	4	3	4	2			6			
*San Jose State U	22	20	26	30	64	12	29	-	11	
Santa Clara-U of	4	5	4	6			7			
Sonoma St U	11	8	18	40			11			
**Southern Cal-U of (USC)	12	7	9	2	61	8	2	1	2	3
**Stanford U (Phys)	40	20	21	22	137	27	23	11	0	23
1**Stanford U (Applied)	-	-	-	-	114	21	-	8	6	23
Westmont Coll	15	7	9	5			4			
Whittier Coll	2	1	0	0			0			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
COLORADO										
Adams State College	0	3	1	0			0			
Colorado Coll	6	7	6	11			12			
**Colorado School of Mines	29	20	28	22	35	9	17	1	0	2
**Colorado St U	15	27	5	24	39	9	14	3	0	3
**Colorado-U of Boulder	65	74	63	60	142	23	32	12	2	12
*Colorado-U of Colo.Spgs.	11	6	9	9	11	4	6	-	1	
Colorado-U of Denver	7	7	8	9			10	-	1	
**Denver-U of	6	0	1	0	17	5	0	2	1	1
Fort Lewis Coll	(8)	(8)	(9)	6			(5)			
Mesa State Coll	(6)	(5)	(5)	(4)			(4)			
Metropolitan St Coll	5	7	6	6			3			
Northern Colorado-U of	10	7	5	6			5			
Southern Colorado-U of	7	6	1	6			3			
US Air Force Academy	30	30	32	27			24			
Western St Coll	6	3	2	0			1			
CONNECTICUT										
*Bridgeport-U of	3	5	3	0	18	6	0	0	3	
Central Conn St Coll	15	20	12	4			3			
Connecticut Coll	4	3	2	1			3			
**Connecticut-U of	16	7	11	9	75	16	12	4	10	2
Fairfield U	5	5	5	6			5			
Hartford-U of	4	4	2	5			2			
New Haven-U of	3	3	2	2			0			
Southern Conn St U	8	5	6	4			3			
Trinity Coll	2	2	1	5			1			
**Wesleyan U	13	13	12	12	11	2	5	0	0	2
**Yale U	25	24	19	21	93	21	19	34	0	14
**Yale U (Applied)	0	0	0	0	29	9	0	0	1	4
DELAWARE										
*Delaware St Coll	25	20	5	2	10	3	4	4	6	
**Delaware-U of	12	11	13	10	64	10	11	5	3	2
DISTRICT OF COLUMBIA										
**American U	2	0	2	3	33	3	2	5	2	1
**Catholic U	6	2	3	4	70	8	1	3	0	2
Dist. of Columbia-U of	3	8	4	1			4			
Gallaudet U	(2)	(2)	(1)	(1)			(0)			
**George Washington U	2	2	4	5	10	2	3	0	0	0
**Georgetown U	10	7	7	6	2		7			
**Howard U	8	6	6	5	14	2	3	1	0	2

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
FLORIDA										
*Central Florida-U of	15	15	10	23	28	12	8	1	0	
Eckerd Coll	3	2	3	0			1			
Florida A&M U	2	3	1	0			1			
**Florida Atlantic U	2	2	5	6	21	5	2	1	1	0
**Florida Inst of Tech	7	4	11	7	20	8	6	3	5	1
*Florida Intl U	3	3	2	4	6	3	3	0	1	
**Florida St U	55	55	27	12	78	21	7	1	4	9
**Florida-U of	25	25	20	14	83	21	16	1	7	9
Jacksonville U	47	31	24	15			15			
**Miami-U of	10	7	7	5	19	4	6	2	0	1
New Coll (U of South FL)	3	3	4	1			6			
Rollins Coll	3	2	0	0			2			
*South Florida-U of	20	20	23	18	32	2	10	1	4	
Stetson U	8	12	3	6			3			
West Florida-U of	4	5	8	3			4			
GEORGIA										
Agnes Scott Coll	3	4	3	6			2			
Augusta Coll	4	3	4	3			4			
Berry Coll	2	3	4	4			2			
*Clark-Atlanta U	5	5	2	5	14	2	5	0	0	
**Emory U	10	12	10	13	4	0	7	0	0	3
**Georgia Inst of Tech	35	39	39	45	84	22	48	6	9	2
Georgia Southern Coll	14	7	8	4			5			
**Georgia St U	15	25	15	7	33	10	7	1	3	0
**Georgia-U of	10	8	6	8	32	8	10	3	2	4
Mercer U	0	4	2	0			2			
Morehouse Coll	20	25	15	11			21			
North Georgia Coll	30	15	8	4			11			
Savannah State Coll	1	0	0	0			0			
Valdosta St Coll	4	2	1	1			4			
West Georgia Coll	29	25	13	6			1			
HAWAII										
Hawaii-U of Hilo	(3)	(2)	(3)	1			(0)			
**Hawaii-U of Honolulu	13	10	8	17	35	7	12	1	0	0
IDAHO										
Boise St U	5	10	9	7			1			
*Idaho St U	5	10	12	4	21	3	2	0	3	
**Idaho-U of	11	18	6	5	10	1	1	0	0	3
Northwest Nazarene Coll	(15)	(12)	(8)	3			(5)			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
ILLINOIS										
Augustana Coll	5	5	5	7			21			
Bradley U	12	5	6	5			6			
**Chicago-U of	35	30	31	29	133	28	29	11	0	21
*DePaul U	2	8	3	9	14	10	7	3	4	
Eastern Illinois U	10	8	6	6			4			
Elmhurst Coll	8	4	4	3			6			
Greenville Coll	4	4	4	3			3			
Illinois Benedictine Col	1	8	1	0			4			
Illinois Coll	0	0	0	0			3			
**Illinois Inst of Tech	10	6	9	9	33	6	14	1	0	1
Illinois St U	60	37	25	7			9			
**IL-U of Chicago	25	25	13	21	80	13	7	6	1	1
**IL-U of Urbana-Ch.	102	50	50	54	300	41	34	34	12	38
Illinois Wesleyan U	20	16	14	12			5			
Knox Coll	6	5	4	5			5			
Lake Forest Coll	2	3	3	1			6			
Lewis U	2	5	2	6			5			
Loyola U of Chicago	15	9	7	6			7			
MacMurray Coll	0	0	0	0			0			
Millikin U	1	1	2	0			0			
Monmouth Coll	3	4	2	3			4			
North Central Coll	5	3	5	3			1			
North Park Coll	7	5	4	5			9			
*Northeastern Illinois U	5	5	5	4	10	4	2	2	1	
*Northern Illinois U	8	18	22	14	43	17	6	0	4	
**Northwestern U	4	4	6	5	90	20	6	2	0	8
Principia Coll	3	3	3	1			4			
Roosevelt U	(0)	(1)	(0)	(1)			(0)			
*Sthrn IL U-Carbondale	7	9	7	8	28	4	5	8	0	
*Sthrn IL U-Edwardsville	4	5	10	11	14	5	6	0	3	
*Western Illinois U	12	3	8	5	12	4	1	6	7	
Wheaton Coll	10	9	4	6			8			
INDIANA										
Anderson U	3	2	3	2			2			
*Ball St U	20	15	8	5	8	3	4	2	3	
Butler U	7	1	7	2			5			
DePauw U	25	5	4	6			7			
Earlham Coll	4	5	2	6			5			
Evansville-U of	2	3	1	5			1			
Franklin Coll	3	2	1	0			0			
Goshen Coll	8	13	4	8			3			
Grace Coll	4	4	3	3			3			
Hanover Coll	4	0	5	1			2			
Indpls-U of	(2)	(2)	(2)	(2)			(2)			
*Indiana St U	4	4	4	5	13	8	3	0	1	
**Indiana U-Bloomington	10	15	9	15	89	16	15	15	7	9
IN U/Purdue U-Ft Wayne	(4)	(4)	(4)	3			(3)			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
INDIANA (continued)										
*IN U/Purdue U-Indpls	3	5	5	3	9	4	2	2	0	
Indiana U-South Bend	6	4	4	4			1			
Manchester Coll	3	2	2	1			3			
**Notre Dame-U of	15	17	5	9	82	18	4	1	2	9
Purdue U-Calumet	3	3	3	2			3			
**Purdue U-West Lafayette	70	58	29	26	148	23	26	16	8	19
*Rose-Hulman Inst of Tech	38	27	30	13	14	4	10	0	3	
Taylor U	3	5	4	3			1			
Valparaiso U	12	10	3	0			3			
Wabash Coll	10	6	10	6			6			
IOWA										
Central Coll	19	10	3	3			2			
Coe Coll	2	3	2	1			3			
Cornell Coll	6	4	1	2			5			
Dordt Coll	1	2	0	1			0			
*Drake U	12	8	3	3	4	1	6	0	0	
Dubuque-U of	(1)	(0)	(1)	(0)			(0)			
Grinnell Coll	20	20	22	13			12			
**Iowa St U	7	17	9	16	95	17	16	0	5	13
**Iowa-U of	30	13	22	17	61	21	7	4	3	4
Loras Coll	2	2	3	1			3			
Luther Coll	15	10	7	5			5			
**Maharishi Intl U	3	2	1	0	5	0	2	1	0	2
Morningside Coll	4	0	2	1			3			
*Northern Iowa-U of	10	12	9	13	1	1	5	0	0	
St Ambrose Coll	4	1	4	1			3			
Wartburg Coll	2	1	4	1			2			
KANSAS										
Baker U	1	0	0	0			1			
Benedictine Coll	2	3	3	3			3			
Bethel Coll	4	3	2	3			4			
*Emporia St U	2	2	2	1	4	1	2	2	0	
Fort Hays St U	13	3	7	7			3			
**Kansas St U	9	8	11	15	31	9	7	2	1	0
**Kansas-U of	25	18	17	20	41	10	4	1	3	4
Kansas Wesleyan U	12	0	1	0			2			
McPherson Coll	1	1	0	0			0			
Mid-America Nazarene Coll	6	5	3	3			2			
*Pittsburg St U	2	2	4	5	10	6	8	0	5	
Southwestern Coll	2	2	2	0			0			
Washburn U	(5)	(4)	(4)	(3)			(2)			
*Wichita St U	4	4	0	1	11	2	2	1	1	

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
KENTUCKY										
Berea Coll	20	10	5	5			5			
Centre Coll of Ky	6	6	5	3			6			
*Eastern Kentucky U	7	5	13	11	6	4	6	1	0	
Georgetown Coll	3	1	0	1			1			
**Kentucky-U of	22	9	8	7	43	4	5	2	1	3
Kentucky Wesleyan Coll	2	1	2	0			0			
*Louisville-U of	6	5	4	4	18	6	3	7	1	
Morehead St U	4	5	5	5			4			
*Murray St U	35	46	28	9	6	5	26	0	0	
Northern Kentucky U	5	5	6	4			2			
Thomas More Coll	5	1	8	1			4			
Transylvania U	(5)	(4)	(5)	6			(4)			
Union Coll	4	4	1	1			0			
Western Kentucky U	22	18	11	9			8			
LOUISIANA										
Centenary Coll	10	4	1	5			7			
Dillard U	(10)	(8)	(5)	(4)			(3)			
Grambling St U	7	10	3	3			1			
**LA St U-Baton Rouge	14	10	20	0	72	14	3	17	0	5
LA St U-Shreveport	10	5	4	2			0			
*Louisiana Tech U	9	9	3	3	3	3	2	4	0	
Loyola U	3	5	1	2			5			
McNeese St U	2	2	4	1			1			
*New Orleans-U of	(12)	(10)	(5)	(4)	24	(5)	(5)	(0)	(6)	
*Northeast Louisiana U	6	1	0	0	8		4	0	1	
Northwestern St U of LA	(3)	(3)	(2)	(0)			(0)			
Southeastern Louisiana U	(4)	(4)	(2)	4			(2)			
Southern U-Baton Rouge	5	7	8	4			3			
Southern U-New Orleans	6	20	35	20			4			
*Southwestern LA-U of	3	8	3	0	5	2	2	1	0	
**Tulane U	6	6	5	6	15	3	4	2	1	1
Xavier U	(2)	(0)	(3)	2			(2)			
MAINE										
Bates Coll	10	8	19	5			25			
Bowdoin Coll	15	15	14	9			11			
Colby Coll	(8)	(6)	(10)	(2)			(5)			
**Maine-U of	12	15	20	12	32	11	12	1	3	1

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
MARYLAND										
Columbia Union College	(2)	(0)	(1)	(0)			(1)			
Frostburg St Coll	15	20	10	17			8			
**Johns Hopkins U	18	14	10	15	89	24	9	14	1	11
Loyola Coll	6	4	5	2			5			
*Maryland-U of Balt. Cnty	10	20	13	9	13	3	5	0	3	
**Maryland-U of Coll. Park	37	45	53	61	255	47	40	12	3	15
Morgan St U	4	4	4	2			2			
Notre Dame-Coll of	5	5	3	1			0			
Salisbury State Coll	(5)	(5)	(6)	(3)			(2)			
Towson St U	25	20	19	5			7			
US Naval Academy	40	42	42	22			38			
Washington Coll	2	2	1	2			2			
Western Maryland Coll	(5)	(5)	(2)	(4)			(1)			
MASSACHUSETTS										
Amherst Coll	15	10	14	6			6			
**Boston Coll	7	10	9	5	35	3	5	4	1	2
**Boston U	22	18	12	8	110	20	5	1	1	7
**Brandeis U	12	10	5	10	53	11	4	0	0	7
Bridgewater St Coll	(8)	(6)	(2)	5			(4)			
**Clark U	6	4	2	2	14	2	2	0	0	1
Curry Coll	3	0	0	1			1			
Eastern Nazarene Coll	(4)	(3)	(3)	(2)			(3)			
Gordon Coll	5	6	4	3			6			
Hampshire Coll	(2)	(1)	(1)	2			(0)			
**Harvard U (w/ Radcliffe)	50	45	63	70	146	20	43	23	1	11
**Harvard U (Applied)	40	30	24	28	50	5	27	8	2	7
Holy Cross-Coll of the	(8)	(5)	(12)	(10)			(8)			
**Lowell-U of	16	23	16	23	152	25	25	4	15	4
**Mass Inst of Tech (MIT)	75	72	73	78	308	55	85	0	7	39
**MA-U of Amherst	30	20	13	20	65	11	18	3	7	6
*MA-U of Boston	5	5	4	1	15	7	5	6	1	
Mount Holyoke Coll	3	3	6	3			4			
North Adams St Coll	3	5	3	2			0			
**Northeastern U	8	5	5	11	98	20	5	5	5	3
Simmons Coll	2	0	2	0			1			
Smith Coll	8	7	7	7			8			
*Southeastern Mass U	5	5	3	1	16	11	2	7	2	
Suffolk U	(3)	(2)	(2)	1			(2)			
**Tufts U	8	7	6	4	51	6	8	4	2	3
Wellesley Coll	20	15	10	3			5			
Wheaton Coll	3	1	1	1			1			
Williams Coll	20	15	11	10			8			
**Worcester Polytech Inst	24	20	13	13	12	3	8	0	0	0
Worcester St Coll	8	8	10	7			7			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
MICHIGAN										
Adrian Coll	2	1	0	0			2			
Albion Coll	15	12	11	4			3			
Alma Coll	6	6	5	6			6			
Andrews U	6	4	4	2			1			
Calvin Coll	4	6	6	10			3			
*Central Michigan U	6	4	4	4	8	3	3	1	0	
*Eastern Michigan U	11	16	26	22	34	17	9	6	0	
Grand Valley St Coll	10	2	4	0			1			
Hillsdale Coll	2	2	0	1			1			
Hope Coll	15	15	17	16			8			
Kalamazoo Coll	12	10	10	10			8			
Lawrence Inst of Tech	10	8	3	3			1			
**Michigan St U	22	31	31	17	150	42	17	7	22	10
**Michigan Technological U	21	14	13	13	21	9	10	2	5	2
**Michigan-U of Ann Arbor	30	25	19	41	142	22	19	15	3	16
Michigan-U of Dearborn	10	10	11	8			1			
Michigan-U of Flint	(3)	(3)	(3)	4			(3)			
Northern Michigan U	5	5	5	2			5			
**Oakland U	10	15	12	10	20	4	10	1	2	1
Saginaw Valley St Coll	4	4	4	4			1			
**Wayne St U	11	13	10	14	59	6	8	1	2	6
*Western Michigan U	10	12	10	6	13	4	5	2	0	
MINNESOTA										
Augsburg Coll	7	7	5	4			4			
Bemidji St U	18	20	12	9			8			
Bethel Coll	5	5	5	5			5			
Carleton Coll	20	20	22	19			27			
Concordia Coll	10	10	11	8			6			
Gustavus Adolphus Coll	15	15	14	10			11			
Hamline U	20	28	10	11			11			
Macalester Coll	25	20	8	7			10			
*Mankato St U	(6)	(5)	(7)	8	15	(7)	(5)	(4)	(0)	
*Minnesota-U of Duluth	14	4	7	8	7	3	0	2	2	
**Minnesota-U of Mpls.	23	39	29	19	155	39	43	2	7	10
Minnesota-U of Morris	8	5	5	2			5			
Moorhead St U	4	3	2	1			0			
St Catherine-Coll of	1	1	2	0			1			
St Cloud St U	10	10	8	8			10			
St John's U	8	10	7	7			7			
St Mary's Coll	5	5	5	4			2			
St Olaf Coll	50	35	22	11			14			
St Thomas-Coll of	5	4	3	3			1			
Southwest St U	4	1	1	1			2			
Winona St U	5	5	3	2			3			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
MISSISSIPPI										
Jackson St U	(2)	(1)	(2)	2			(1)			
Millsaps Coll	5	3	6	5			3			
Mississippi Coll	3	4	1	0			0			
**Mississippi St U	12	8	10	1	10	3	4	4	2	0
**Mississippi-U of	6	5	7	5	30	6	9	3	1	3
*Sthrn Mississippi-U of	(10)	(8)	(4)	(3)	(12)	(4)	(5)	(1)	(1)	
Tougaloo Coll	6	5	3	4			4			
MISSOURI										
Central Missouri St U	4	4	3	2			3			
Drury Coll	2	2	1	0			0			
Missouri Southern St Coll	1	1	1	1			2			
**MO-U of Columbia	15	10	12	6	36	8	9	1	3	1
*MO-U of Kansas City	2	4	7	5	19	5	3	6	2	
**MO-U of Rolla	9	19	11	11	34	6	11	2	0	2
**MO-U of St Louis	6	5	7	6	10	5	5	0	4	0
Northeast Missouri St U	13	12	11	4			4			
Northwest Missouri St U	1	1	1	0			1			
Rockhurst Coll	(2)	(2)	(2)	(1)			(1)			
St Louis U	4	2	4	3			1			
Southeast Missouri St U	(10)	(10)	(8)	(7)			(6)			
Southwest Missouri St U	40	29	25	17			7			
**Washington U	15	25	14	21	70	14	15	7	3	6
Westminster Coll	2	1	1	2			0			
William Jewell Coll	(8)	(8)	(6)	(3)			(3)			
MONTANA										
**Montana St U	21	12	14	19	59	20	12	2	4	6
*Montana-U of	5	7	7	4	4	2	4	0	1	
NEBRASKA										
Chadron St Coll	(3)	(3)	(2)	(2)			(2)			
*Creighton U	2	4	6	6	12	6	6	3	1	
Hastings Coll	10	10	11	6			5			
Kearney St Coll	5	8	10	8			10			
**Nebraska-U of Lincoln	14	12	14	20	51	10	11	1	2	3
Nebraska-U of Omaha	(10)	(10)	(8)	(8)			(6)			
Nebraska Wesleyan U	10	6	6	4			2			
Union Coll	3	0	1	1			2			
NEVADA										
*Nevada-U of Las Vegas	15	14	9	4	9	4	6	0	3	
**Nevada-U of Reno	4	0	4	8	35	7	4	2	3	1

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NEW HAMPSHIRE										
**Dartmouth Coll	12	12	11	8	29	7	13	2	2	5
**New Hampshire-U of	18	15	15	8	31	5	12	2	2	3
NEW JERSEY										
Drew U	3	3	3	2			3			
*Fairleigh Dickinson University-Teaneck	0	0	0	1	0	0	1	1	0	
Georgian Court Coll	2	1	2	1			3			
Monmouth Coll	1	1	0	1			0			
Montclair St Coll	1	2	4	4			4			
**Princeton U	50	40	30	18	118	40	27	0	0	18
Rider Coll	2	0	1	1			1			
**Rutgers U-Busch	29	35	35	27	99	17	27	1	2	10
Rutgers U-Camden	3	6	11	3			12			
Rutgers U-Newark	4	5	3	2			7			
St Peters Coll	1	2	2	0			1			
Seton Hall U	10	7	3	4			2			
**Stevens Inst of Tech	6	5	8	6	78	10	7	7	12	4
Stockton St Coll	9	8	8	7			5			
Trenton St Coll	4	3	2	6			2			
NEW MEXICO										
Eastern New Mexico U	3	3	3	1			1			
**NM Inst of Mining & Tech	50	20	21	26	21	2	16	2	1	4
**New Mexico St U	22	8	9	19	44	16	7	3	5	3
**New Mexico-U of	15	15	17	34	129	43	10	16	0	9
NEW YORK										
**Adelphi U	4	4	6	4	12	7	5	6	0	1
Alfred U	(3)	(2)	(2)	(0)			(1)			
Bard Coll	7	6	6	5			2			
Barnard Coll	2	2	2	1			1			
**Brooklyn Coll (CUNY)	5	4	1	2	38	7	3	2	0	2
CW Post Coll	5	2	2	1			0			
Canisius Coll	4	2	2	1			1			
**City Coll (CUNY)	10	15	12	13	83	11	10	0	2	10
**Clarkson U	10	10	4	8	21	4	10	5	1	2
Colgate U	20	8	2	6			8			
**Columbia U	25	20	15	14	108	16	6	15	0	17
**Cornell U (Phys)	30	30	42	35	201	26	41	33	2	18
**Cornell U (Appl Phys)	10	4	35	40	88	11	36	6	2	12
Fordham U	10	8	8	7			3			
Hamilton Coll	20	10	6	6			7			

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NEW YORK (continued)										
Hartwick Coll	5	2	3	3			2			
Herbert Lehman Col (CUNY)	0	0	0	0			0			
Hobart & Wm Smith Coll	3	3	2	1			2			
Hofstra U	2	2	2	1			2			
Houghton Coll	5	2	3	3			3			
**Hunter Coll (CUNY)	12	10	8	6	29	11	4	4	2	2
Iona Coll	2	1	1	0			0			
Ithaca Coll	12	9	11	7			7			
Le Moyne Coll	5	3	2	3			3			
Manhattan Coll	0	2	3	0			5			
Manhattanville Coll	0	0	0	0			1			
New York Inst of Tech	3	3	6	4			7			
**New York U (NYU)	10	10	11	11	83	18	7	9	3	11
**Polytechnic Inst of NY	5	5	2	3	32	6	2	3	4	1
**Queens Coll (CUNY)	10	10	5	6	26	1	2	1	1	3
**Rensselaer Polytech Inst	63	75	54	31	97	21	54	2	6	5
Roberts Wesleyan Coll	1	1	0	0			1			
Rochester Inst of Tech	17	27	14	11			8			
**Rochester-U of	25	17	12	15	108	26	18	19	1	10
1**Rockefeller U	-	-	-	-	6	1	-	-	-	2
*St Bonaventure U	2	3	3	3	6	2	3	2	0	
St John Fisher Coll	4	2	2	0			5			
St John's U	3	3	2	3			5			
St Lawrence U	(5)	(5)	(4)	5			(1)			
Siena Coll	12	8	5	2			4			
**SUNY-Albany	15	15	12	13	80	23	17	8	8	6
*SUNY-Binghamton	70	50	19	19	26	9	19	2	2	
**SUNY-Buffalo	35	30	7	14	80	26	8	7	2	6
**SUNY-Stony Brook	7	7	17	35	191	49	30	10	6	18
SUNY Coll-Brockport	5	10	13	5			3			
SUNY Coll-Buffalo	6	12	10	6			6			
SUNY Coll-Cortland	18	9	13	5			3			
SUNY Coll-Fredonia	15	15	31	18			16			
SUNY Coll-Geneseo	60	30	22	20			20			
*SUNY Coll-New Paltz	4	4	5	7	8	0	9	0	0	
SUNY Coll-Oneonta	20	15	11	8			4			
SUNY Coll-Oswego	18	9	15	13			10			
SUNY Coll-Plattsburgh	30	15	8	5			6			
SUNY Coll-Potsdam	30	25	16	18			19			
SUNY Coll-Purchase	1	1	1	0			0			
Staten Island-Coll of	2	1	1	1			0			
**Syracuse U	7	6	4	3	63	17	4	8	0	4
Union Coll	5	5	6	5			5			
US Military Academy	25	25	23	25			27			
Utica Coll	(4)	(4)	(3)	(3)			(2)			
Vassar Coll	6	3	12	3			6			
Wagner Coll	6	6	5	1			4			
Yeshiva U	5	3	3	2			2			
York Coll (CUNY)	15	10	4	1			1			

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NORTH CAROLINA										
*Appalachian St U	6	10	12	8	8	4	10	0	0	
Davidson Coll	6	8	6	5			6			
**Duke U	20	15	16	22	66	11	16	7	2	5
*East Carolina U	8	6	9	8	11	5	5	0	0	
Elizabeth City St U	2	2	2	1			3			
Elon Coll	1	1	1	0			0			
Guilford Coll	7	6	2	6			5			
Lenoir-Rhyne Coll	(3)	(2)	(2)	(4)			(4)			
North Carolina A&T St U	6	6	1	3			2			
North Carolina Central U	22	7	7	0			2			
**North Carolina St U	89	42	25	25	79	17	21	0	4	5
NC-U of Asheville	5	6	8	5			1			
**NC-U of Chapel Hill	25	23	21	25	61	11	15	5	3	8
NC-U of Charlotte	12	12	8	10			4			
*NC-U of Greensboro	10	5	6	4	20	2	2	0	3	
NC-U of Wilmington	(5)	(4)	(3)	7			(3)			
Pfeiffer Coll	0	0	0	0			0			
*Wake Forest U	20	15	8	14	11	6	9	2	0	
Western Carolina U	5	3	3	1			2			
NORTH DAKOTA										
Minot St Coll	2	1	1	0			0			
**North Dakota St U	8	3	4	4	9	2	4	2	1	4
**North Dakota-U of	4	7	8	9	10	4	2	3	2	1
OHIO										
1**Air Force Inst of Tech	-	-	-	-	38	17	-	2	8	3
*Akron-U of	10	10	12	14	30	10	5	0	9	
Antioch Coll	2	4	2	2			0			
Baldwin-Wallace Coll	(2)	(2)	(2)	(1)			(1)			
Bluffton Coll	1	1	1	0			0			
*Bowling Green St U	8	6	10	7	15	9	7	3	0	
**Case Western Reserve U	27	25	17	8	45	13	18	10	2	6
**Cincinnati-U of	5	13	3	3	63	6	2	8	5	4
*Cleveland St U	10	10	7	6	9	5	9	0	2	
Dayton-U of	7	3	5	1			3			
Denison U	12	6	6	4			6			
Heidelberg Coll	(3)	(2)	(2)	(2)			(0)			
Hiram Coll	5	2	4	2			2			
*John Carroll U	18	18	5	7	9	4	15	0	4	
**Kent St U	16	16	17	17	71	18	7	1	4	5
Kenyon Coll	8	4	11	9			7			
Marietta Coll	0	1	1	0			0			

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OHIO (continued)										
*Miami U	38	32	27	20	13	6	18	1	6	
Mount Union Coll	5	2	2	2			3			
Oberlin Coll	15	12	11	6			12			
Ohio Northern U	0	2	1	1			1			
**Ohio St U	19	41	42	53	140	35	36	9	3	19
**Ohio U	23	12	6	9	56	16	6	2	6	5
Ohio Wesleyan U	5	5	6	2			3			
Otterbein Coll	(2)	(1)	(2)	(3)			(0)			
**Toledo-U of	20	20	15	2	34	6	3	4	0	2
Wittenberg U	8	8	9	4			3			
Wooster-U of	20	15	11	5			5			
*Wright St U	16	5	6	6	21	5	4	1	0	
Xavier U	17	8	7	11			9			
Youngstown St U	5	5	2	5			2			
OKLAHOMA										
Cameron U	(4)	(3)	(5)	(6)			(3)			
*Central St U	30	30	17	29	23	7	10	3	4	
East Central OK St U	5	10	4	2			3			
Northeastern OK St U	0	7	8	5			5			
Oklahoma Baptist U	3	0	0	2			0			
Oklahoma City U	3	6	8	4			2			
**Oklahoma St U	7	6	8	4	44	11	2	1	3	1
**Oklahoma-U of	18	11	20	27	44	6	14	1	4	3
OK-U of Sci and Arts	(2)	(2)	(1)	(1)			(0)			
Oral Roberts U	4	3	2	2			1			
Phillips U	0	0	0	0			0			
Southeastern OK State	3	2	2	8			1			
Southern Nazarene U	6	6	4	2			2			
Southwestern OK State	20	12	3	4			7			
Tulsa-U of	7	8	5	3			5			
OREGON										
Eastern Oregon State Coll	6	5	4	4			4			
Lewis & Clark Coll	10	12	11	3			5			
Linfield Coll	8	6	8	3			3			
1**Oregon Graduate Center	-	-	-	-	31	7	-	0	3	3
**Oregon St U	21	10	11	12	54	15	9	14	3	2
**Oregon-U of	17	25	15	18	146	24	13	12	3	10
Pacific U	2	3	2	2			2			
**Portland St U	22	27	10	29	24	2	3	0	2	0
Portland-U of	4	4	5	3			2			
Reed Coll	25	30	18	18			21			
Southern Oregon St U	7	6	3	3			2			
Willamette U	10	10	8	6			7			

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PENNSYLVANIA										
Albright Coll	6	3	6	2			4			
Allegheny Coll	9	9	9	10			13			
Bloomsburg St Coll	9	7	10	9			6			
**Bryn Mawr Coll	9	12	5	9	7	0	10	1	0	1
Bucknell U	9	10	9	8			5			
California St U of Pa	(5)	(6)	(6)	(4)			(5)			
**Carnegie Mellon U	40	35	24	25	71	18	29	13	3	6
Clarion St Coll	8	8	10	3			3			
Dickinson Coll	13	11	6	7			8			
**Drexel U	18	2	14	12	44	12	10	7	0	5
Duquesne U	5	5	1	2			3			
East Stroudsburg St Coll	5	3	3	2			1			
Edinboro U	15	15	5	4			7			
Elizabethtown Coll	2	1	1	0			0			
Franklin & Marshall Coll	10	15	7	11			7			
Gannon U	1	1	1	2			0			
Geneva Coll	0	3	1	2			0			
Gettysburg Coll	5	3	3	4			5			
Grove City Coll	1	2	2	4			9			
Haverford Coll	10	10	11	5			10			
*Indiana U of Pa	31	20	12	20	16	5	8	4	1	
Juniata Coll	1	0	1	0			2			
Kings Coll	1	0	0	0			1			
Kutztown St Coll	3	8	5	2			2			
Lafayette Coll	(3)	(3)	(2)	(3)			(5)			
La Salle Coll	1	2	2	0			1			
Lebanon Valley Coll	7	5	5	3			3			
**Lehigh U	5	6	10	7	54	9	8	9	6	3
Lincoln U	5	10	6	5			8			
Lock Haven St Coll	5	4	4	5			2			
Lycoming Coll	6	6	3	3			0			
Mansfield U	10	5	3	3			8			
Millersville U	(25)	(20)	(12)	(10)			(13)			
Moravian Coll	10	9	3	4			3			
Muhlenberg Coll	8	7	3	7			5			
**Pennsylvania St U	25	25	36	31	94	14	27	1	3	4
**Pennsylvania-U of	10	7	9	11	120	25	10	3	2	23
**Pittsburgh-U of	15	15	13	6	85	16	11	10	1	11
St Josephs U	3	4	1	2			2			
St Vincent Coll	(4)	(3)	(4)	(3)			(3)			
Scranton-U of	2	2	3	2			2			
Shippensburg U	7	1	7	5			6			
Slippery Rock U	7	7	7	5			5			
Susquehanna U	3	2	7	4			6			
Swarthmore Coll	21	21	12	6			6			
**Temple U	25	20	11	9	42	15	8	2	3	1
Thiel Coll	0	1	1	1			4			
Ursinus Coll	3	2	2	6			6			
Villanova U	17	6	5	5			3			
Wash. & Jefferson Coll	5	5	0	2			0			

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PENNSYLVANIA (continued)										
West Chester U	14	12	6	14			3			
Westminster Coll	10	11	3	3			3			
Widener U	1	1	0	0			0			
*Wilkes Coll	2	4	3	1	2	0	2	0	0	
RHODE ISLAND										
**Brown U	20	20	18	13	87	17	6	15	2	17
Providence Coll	3	2	3	2			7			
**Rhode Island-U of	24	3	6	4	27	4	3	1	1	0
SOUTH CAROLINA										
Baptist Col @ Charleston	0	0	0	0			0			
Benedict Coll	20	10	10	5			4			
Bob Jones U	15	12	9	3			4			
Charleston-Coll of	6	7	0	2			11			
Citadel, The	3	6	6	2			4			
**Clemson U	10	8	7	4	38	13	4	4	1	5
Erskine Coll	3	5	2	4			0			
Furman U	3	8	7	9			2			
Presbyterian Coll	8	10	3	2			4			
**South Carolina-U of	17	16	14	8	37	3	4	1	5	5
Wofford Coll	6	6	5	4			4			
SOUTH DAKOTA										
Augustana Coll	4	4	0	0			4			
Dakota State Coll	(3)	(2)	(2)	(3)			(2)			
*SD Sch. of Mines & Tech	8	8	7	5	14	6	10	0	2	
*South Dakota St U	8	6	8	9	6	1	9	0	1	
South Dakota-U of	(6)	(6)	(5)	(10)			(2)			
TENNESSEE										
Austin Peay St U	(5)	(4)	(2)	4			(2)			
Belmont Coll	(5)	(5)	(4)	(3)			(2)			
Carson-Newman Coll	2	2	0	5			0			
Christian Brothers Coll	1	1	1	1			4			
David Lipscomb Coll	4	3	1	0			3			
East Tennessee St U	4	5	5	3			1			
*Fisk U	5	3	4	5	9	5	1	4	0	
King Coll	2	3	3	2			6			
*Memphis St U	10	10	6	5	15	8	4	0	2	

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Freshmen	Sophomores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
TENNESSEE (continued)										
Middle Tennessee St U	(4)	(4)	(3)	4			(4)			
South-U of the	5	6	9	4			8			
Southern Coll	7	6	2	2			2			
Rhodes Col (SW @ Memp.)	(6)	(5)	(2)	1			(2)			
Tennessee St U	(2)	(3)	(2)	(1)			(2)			
Tennessee Tech U	9	5	5	2			5			
TN-U of Chattanooga	(15)	(12)	(12)	21			(7)			
**TN-U of Knoxville	2	4	10	20	81	19	5	1	4	6
1**TN-U of Space Inst	-	-	-	-	17	4	-	0	0	1
**Vanderbilt U	15	16	9	3	56	11	11	2	0	1
TEXAS										
Abilene Christian U	12	4	7	5			3			
Angelo St U	25	17	7	7			7			
Austin Coll	5	10	4	2			2			
**Baylor U	14	29	6	7	21	6	1	3	0	1
Dallas Baptist U	(0)	(0)	(0)	0			(0)			
Dallas-U of	14	7	2	3			9			
*East Texas St U	10	10	8	6	13	4	6	0	3	
Hardin-Simmons U	(3)	(2)	(2)	2			(1)			
Houston Baptist U	1	2	2	5			2			
**Houston-U of	25	25	20	15	89	15	6	2	0	2
Lamar U	4	4	6	3			8			
McMurry Coll	5	0	1	1			1			
**North Texas St U	15	19	12	24	101	11	6	12	1	1
Prairie View A&M U	3	3	2	2			0			
**Rice U	35	35	32	37	56	13	14	5	2	8
St Mary's U	1	1	0	0			0			
*Sam Houston St U	16	6	11	10	18	9	2	3	2	
Southern Methodist U	3	2	4	3			1			
*Southwest Texas St U	21	12	18	17	11	3	9	3	0	
Southwestern U	4	3	2	2			1			
*Stephen F Austin St U	13	10	5	4	8	4	3	0	3	
Tarleton St U	5	3	2	1			3			
Texas A&I U	4	2	2	1			4			
**Texas A&M U	35	30	31	39	149	39	12	5	12	3
**Texas Christian U	6	5	4	0	15	4	6	0	1	3
Texas Southern U	(8)	(6)	(8)	(8)			(5)			
**Texas Tech U	9	5	5	2	48	12	1	2	2	3
**Texas-U of Arlington	25	15	6	9	43	8	12	2	2	4
**Texas-U of Austin	58	36	34	47	325	64	32	3	3	27
**Texas-U of Dallas	0	0	30	15	95	26	8	4	5	13
*Texas-U of El Paso	4	6	8	8	6	2	9	0	10	
Texas-U of Pan American	30	9	8	3			0			
Texas-U of San Antonio	6	6	4	12			4			
Trinity U	7	6	5	4			5			
West Texas St U	4	3	4	1			6			

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
UTAH										
**Brigham Young U	56	41	35	36	33	8	25	0	3	2
**Utah St U	12	14	16	12	42	10	13	4	2	2
**Utah-U of	35	40	28	50	113	25	41	11	7	4
Weber St Coll	19	10	6	14			8			
Westminster Coll	5	2	2	0			2			
VERMONT										
Marlboro Coll	4	4	2	0			0			
Middlebury Coll	9	6	15	7			12			
Norwich U	4	2	2	1			1			
St Michael Coll	1	3	1	0			1			
*Vermont-U of	8	15	8	5	14	7	5	0	2	
VIRGINIA										
Bridgewater Coll	6	3	4	1			3			
Christopher Newport Coll	15	10	8	5			5			
Emory & Henry Coll	(2)	(1)	(0)	0			(0)			
*George Mason U	21	21	15	10	19	8	8	0	1	
Hampden-Sydney Coll	3	3	5	4			7			
*Hampton University	5	5	2	3	17	4	4	5	0	
Hollins Coll	3	2	0	0			0			
James Madison U	20	12	12	7			5			
Longwood Coll	33	21	17	5			8			
*Lynchburg Coll	5	3	5	3	2		5	0	0	
Mary Washington Coll	10	8	18	6			14			
Norfolk St U	(3)	(4)	(3)	3			(3)			
**Old Dominion U	3	5	18	11	27	11	8	0	2	1
Randolph-Macon Coll	5	2	3	2			2			
Randolph-M'n Woman's Coll	1	1	1	3			0			
Richmond-U of	5	5	2	1			6			
Roanoke Coll	5	5	4	2			4			
Sweet Briar Coll	3	0	1	1			1			
*Virginia Commonwealth U	3	8	12	16	10	1	2	2	2	
Virginia Military Inst	11	2	3	3			5			
**Virginia Polytech Inst	50	35	23	28	49	14	13	1	2	10
*Virginia St U	5	13	4	6	8	1	1	1	0	
**Virginia-U of	25	25	11	21	87	16	20	2	3	12
Washington & Lee U	6	4	3	3			0			
**Coll of William & Mary	30	25	25	7	49	12	15	5	1	3

Institution	1989-90 PHYSICS ENROLLMENTS: Undergraduate physics majors: Fresh-men	Sopho-mores	Jr's	Sr's	Graduate students ft + pt: Total	1st yr.	1988-89 PHYSICS DEGREES: Bach.	MS	TMS	PhD
WASHINGTON										
Central Washington U	10	5	4	2			4			
Eastern Washington U	8	5	3	6			13			
Gonzaga U	1	2	6	3			4			
Pacific Lutheran U	5	5	0	5			2			
Puget Sound-U of	10	12	15	13			14			
Seattle Pacific U	3	3	2	3			5			
Seattle U	(4)	(2)	(4)	(2)			(3)			
Walla Walla Coll	7	1	4	3			2			
**Washington St U	26	15	9	10	49	22	8	7	5	1
**Washington-U of	30	30	40	40	159	35	50	14	19	13
Western Washington U	(30)	(25)	(15)	(13)			(10)			
Whitman Coll	(25)	(20)	(15)	7			(12)			
Whitworth Coll	3	4	2	3			4			
WEST VIRGINIA										
Bethany Coll	6	6	4	2			3			
*Marshall U	(6)	(6)	(5)	(5)	5	(1)	(3)	(0)	(1)	
W. Virginia Inst of Tech	3	2	3	0			1			
**West Virginia U	8	10	11	5	25	10	8	1	4	6
W. Virginia Wesleyan Col	20	14	12	12			15			
Wheeling Coll	0	4	0	4			3			
WISCONSIN										
Beloit Coll	4	0	3	8			3			
Carroll Coll	5	5	4	4			0			
Carthage Coll	0	0	1	0			0			
Lawrence U	25	18	13	4			5			
*Marquette U	4	2	3	2	16	8	2	6	3	
Ripon Coll	10	7	4	4			3			
St Norbert Coll	4	2	8	3			2			
WI-U of Eau Claire	19	15	20	17			14			
WI-U of Green Bay	3	4	2	3			2			
WI-U of La Crosse	6	2	0	1			0			
**WI-U of Madison	25	20	21	49	187	31	40	13	9	24
**WI-U of Milwaukee	8	6	10	5	42	14	5	3	1	2
*WI-U of Oshkosh	8	3	4	4	8	1	1	0	2	
WI-U of Parkside	5	5	6	1			1			
WI-U of Platteville	2	4	4	1			0			
WI-U of River Falls	12	13	7	8			6			
WI-U of Stevens Point	3	2	3	4			2			
WI-U of Superior	(4)	(4)	(3)	1			(4)			
WI-U of Whitewater	5	4	4	2			1			
WYOMING										
**Wyoming-U of	4	6	8	6	26	6	1	0	1	4

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AIP Pub. No. R-151.27b

June 1990

DATA ON ASTRONOMY ENROLLMENTS AND DEGREES

This supplement is an institutional listing of the 64 degree-granting astronomy/astrophysics departments in the U.S., 24 of which are combined physics and astronomy departments. The institutions are listed in alphabetic order by state. For each institution the 1988-89 degrees and the 1989-90 enrollments are given.

Notations used in this supplement are:

C	Combined physics and astronomy department.
S	Separate astronomy department.
*	Institution grants master's degree as its highest astronomy degree.
**	Institution grants doctorate as its highest astronomy degree.
1	No undergraduate degree program in astronomy.

Member Societies: The American Physical Society • Optical Society of America • Acoustical Society of America • The Society of Rheology • American Association of Physics Teachers
American Crystallographic Association • American Astronomical Society • American Association of Physicists in Medicine • American Vacuum Society • American Geophysical Union

Institution	Type of dept.	1989-90 ASTRONOMY ENROLLMENTS: Introductory with prior physics	Introductory without prior physics	Undergraduate majors Jrs.	Undergraduate majors Srs.	Graduate students ft + pt Total	Graduate students 1st yr.	1988-89 ASTRONOMY DEGREES: BS/BA	MS	TMS	PHD
ARIZONA											
**AZ-U. of	S	70	3600	15	6	34	7	12	0	1	5
CALIFORNIA											
**CA Inst. of Tech.	C	27	31	7	1	26	4	0	-	-	0
**CA-U. of Berkeley	S	73	670	6	13	34	8	11	3	-	2
**CA-U. of Los Angeles	S	0	2528	10	11	21	3	8	4	0	4
l**CA-U. of Santa Cruz	S	50	1150	-	-	32	12	-	3	-	5
*San Diego State U.	S	0	1500	6	2	18	7	3	2	1	
Southern CA-U. of	S	39	694	2	1			1			
COLORADO											
l**CO-U. of Boulder	S	-	2000	-	-	39	11	-	2	2	6
CONNECTICUT											
*Wesleyan U.	S	30	160	6	1	3	3	1	0	1	
**Yale U.	S	23	225	1	3	17	5	2	5	-	1
DELAWARE											
**DE-U. of	C	15	80	0	1	12	0	0	0	0	1
DISTRICT OF COLUMBIA											
Howard U.	C	0	29	2	0			0			
FLORIDA											
**FL-U. of Gainesville	S	15	3900	4	1	29	5	5	2	1	3
GEORGIA											
Agnes Scott Coll.	C	0	38	1	4			0			
Valdosta State Coll.	C	0	387	1	0			1			
HAWAII											
l**Hawaii-U. of at Manoa	S	0	690	-	-	23	9	-	6	0	5
ILLINOIS											
l**Chicago-U. of	S	-	260	-	-	40	10	-	3	-	1
**IL-U. of Urbana	S	218	2424	3	4	16	2	6	0	-	3
**Northwestern U.	C	0	200	1	1	5	0	0	0	-	0

Institution	Type of dept.	1989-90 ASTRONOMY ENROLLMENTS: Introductory with prior physics	Introductory without prior physics	Undergraduate majors Jrs.	Undergraduate majors Srs.	Graduate students ft + pt Total	Graduate students 1st yr.	1988-89 ASTRONOMY DEGREES: BS/BA	MS	TMS	PHD
INDIANA											
**IN-U. of Bloomington	S	0	1317	6	3	17	2	5	1	-	3
IOWA											
1**IA State U.	C	85	503	-	-	9	4	-	0	2	1
*IA-U. of	C	0	1643	8	3	20	8	1	2	0	
KANSAS											
KS-U. of	C	0	600	3	2			4			
MARYLAND											
**MD-U. of	S	100	1500	8	6	29	5	6	2	1	2
MASSACHUSETTS											
**Boston U.	S	15	361	5	3	19	3	4	3	0	1
**Harvard U.	S	0	481	9	8	25	4	4	0	-	2
**MA-U. of Five Coll.	S	0	1024	13	5	31	5	9	1	0	3
Wellesley Coll.	S	18	190	4	2			4			
Williams Coll.	S	36	82	2	2			2			
MICHIGAN											
MI State U.	C	35	3800	5	3			8			
**MI-U. of	S	25	1400	4	4	14	0	7	2	-	2
MINNESOTA											
Mankato State U.	S	0	1100	3	3			3			
**MN-U. of	S	0	4000	6	16	17	2	9	1	1	1
NEBRASKA											
**NE-U. of Lincoln	C	12	1271	2	1	4	0	1	0	0	0
NEW JERSEY											
**Princeton U.	S	20	65	4	3	16	4	6	0	0	4
NEW MEXICO											
1**NM State U.	S	0	400	-	-	16	4	-	0	0	0
NM-U. of	C	75	1492	4	11			2			
NEW YORK											
**Columbia U.	S	36	336	0	0	15	4	1	4	1	0
1**Cornell U.	S	0	450	-	-	27	7	-	2	0	2
**Rochester-U. of	C	24	148	2	4	11	2	5	-	-	0
**SUNY-Stony Brook	S	200	650	1	2	13	3	6	1	0	2
(Earth & Space Sci.)											
Vassar Coll.	C	0	75	6	0			2			

Institution	Type of dept.	1989-90 ASTRONOMY ENROLLMENTS: Introductory with prior physics	Introductory without prior physics	Undergraduate majors Jrs.	Undergraduate majors Srs.	Graduate students ft + pt Total	Graduate students 1st yr.	1988-89 ASTRONOMY DEGREES: BS/BA	MS	TMS	PHD
OHIO											
**Case Western Reserve	S	17	38	3	1	0	0	2	0	0	2
Mount Union Coll.	C	0	25	1	0			0			
**OH State U.	S	0	3536	3	5	14	3	1	0	0	0
Youngstown State U.	C	0	1000	1	1			0			
OKLAHOMA											
**OK-U. of	C	0	900	6	12	8	2	2	-	-	0
PENNSYLVANIA											
Haverford Coll.	S	15	45	0	2			2			
Lycoming Coll.	C	9	97	3	1			1			
**PA State U.	S	180	3450	7	8	20	7	12	0	0	5
**PA-U. of	S	67	388	6	2	7	1	1	0	1	1
**Pittsburgh-U. of	C	50	1028	0	0	0	0	0	0	0	1
Swarthmore Coll.	C	0	150	3	1			1			
Villanova U.	S	20	300	2	0			3			
TENNESSEE											
*Vanderbilt U.	C	10	425	4	2	2	2	2	2	2	
TEXAS											
1**Rice U. Space Physics	S	-	-	-	-	43	13	-	6	0	4
**TX-U. of Austin	S	250	6000	13	10	53	8	13	5	1	7
UTAH											
1**Brigham Young U.	C	0	300	-	-	3	0	-	-	-	1
VERMONT											
Marlboro Coll.	C	0	15	0	0			0			
VIRGINIA											
**VA-U. of	S	22	950	4	8	20	4	5	8	1	11
WASHINGTON											
**WA-U. of	S	0	1200	1	6	25	1	3	6	0	1
Whitman Coll.	S	50	150	1	2			1			
WISCONSIN											
**WI-U. of Madison	S	70	1105	6	10	15	2	8	1	-	2
WYOMING											
WY-U. of	C	0	250	2	0			1			